

(I)—CUTTING OF CREEPERS, REMOVAL OF INFERIOR SPECIES,  
AND EARLY THINNINGS.

108. The eradication of prickly pear (*Opuntia dillenia*) is carried on by forest guards in the bábul reserves in the plains of the Deccan, where it is of fresh appearance and in small quantities. But in several of the reserves the prickly pear has grown and extended so in past years that it has become the principal species, and its eradication is a very desirable performance. Upwards of Rs. 400 were expended in the Poona Division in cutting it down and destroying it from the Gozubari and other reserves. In the same way the prickly pear was removed to a certain extent from the Khandála and Tásgaon Reserved Forests of the Sátára Division at a cost of Rs. 124-3-0, and a small expenditure was likewise incurred in the Sholápur Division for like purpose.

## CHAPTER IV.

### YIELD AND WORKING.

#### 1.—DEPARTMENTAL OPERATIONS.

##### (a) — TIMBER.

###### *North Thána Division.*

109. The timber felled departmentally and sold in lump, the produce of each forest, separately by auction or tender to the trade appears in the following statement :—

No.	Range.	Number of Trees felled.	YIELD.		Cost.	Receipts.	Remarks.
			Timber Pieces.	Fire- wood (Carts).			
<i>Teak Fellings.</i>							
1	Sálsette ...	... 3,000	4,694	298	1,142 7 10	5,835 4 0	
2	Bassein ...	... 7,751	12,361	825	1,619 2 4	9,692 15 3	
3	Váda ...	... ...	...	...	.....	.....	
4	Máhím ...	... 11,457	16,148	1,875	2,222 7 2	10,204 8 0	
5	Dáhánu ...	... 18,710	24,837	2,723	2,725 8 0	21,767 14 0	
6	Umbargaon	... 7,154	8,845	531	1,724 11 0	7,847 4 6	
	Total	... 48,072	66,885	6,252	9,434 4 4	55,347 13 9	
<i>Ain, Khair, Tivas, &amp;c., Fellings.</i>							
1	Bassein ...	... 1,500	2,275	200	408 14 0	1,000 0 0	
2	Máhím ...	... 4,000	4,599	440	767 12 9	4,445 0 0	
3	Dáhánu ...	... 2,143	1,947	412	626 12 3	2,726 0 0	
	Total	... 7,643	8,821	1,052	1,803 7 0	8,171 0 0	

110. Firewood has been included in the above, as it consisted of the crown branches, loppings, and stumps of the timber. About 3,500 cart-loads of it were sold to villagers residing on the coast for home consumption at 8 annas a cart-load, and it was taken away on permits. The villagers appreciate this system of sale, and it has advantages for the department, in so far as it keeps people out of the forests who would otherwise be searching for dead-wood, and would be aiding in its manufacture.

111. Retail auction sales of timber, made with a view of placing facilities in the way of villagers for supplying their wants in building and other material, were not generally successful. At some of the sales the attendance of purchasers was good, and the bidding brisk, but at others, in the Máhím and Dáhánu ranges, there was no demand at all, and the material had to be sold subsequently for the trade.

112. The following is an abstract of the quantities of timber sold and of the financial results :—

No.	Ranges.	Number of Coupes.	TIMBER.		Cost.	Receipts.	Remarks.
			Teak.	Jungle- wood.			
1	Sálsette	3	4,383	284	1,142 7 10	5,589 4 0	
2	Bassein	3	8,117	...	1,091 14 4	6,190 15 3	
3	Máhím	5	9,949	2,049	1,663 14 11	8,107 0 0	All but 386 pieces sold in lump.
4	Dáhanu	3	6,623	...	1,036 1 7	3,432 14 0	Do. 556 do.
5	Umbargaon	3	8,845	...	1,724 11 0	9,545 2 6	1,414 pieces sold in lump for Rs. 2,255.
	Total	17	37,917	2,333	6,659 1 8	32,865 3 9	

Firewood fellings were made to the extent shown :—

No.	Ranges.	Number of Coupes.	Number of Trees.	YIELD.		Cost.	Receipts.	Remarks.
				Timber Pieces.	Fire- wood.			
1	Sálsette	1	4,321	78	2,735	1,699 0 6	1,710 0 0	
2	Bassein	4	20,596	547	8,111	3,200 11 2	3,916 4 0	
3	Máhím	4	6,380	...	2,051	957 15 6	2,822 0 0	
4	Dáhanu	2	8,423	...	2,340	495 0 0	1,601 4 0	
	Total	11	39,720	625	15,237	6,352 11 2	10,049 8 0	

113. All the firewood in the Bassein Range was felled for supply to sugar-boilers ; the material was brought outside the coupes and stacked, and then the cartmen were allowed to remove it on permits. The sugar-boilers removed all the best wood in 1,285 large and 97 small carts containing about 3,500 khandis, and then left the remainder, which they would not take, to be sold to timber-dealers. These retail sales of firewood are very unprofitable ; they give a great deal of trouble, and interfere seriously with private trade. The net profit in Sálsette has amounted to Rs. 10-15-6 and in Bassein to Rs. 715-8-10, but the cost of supervision has not been taken into account.

#### South Thána Division.

114. The sales were made by auction or tender in lump and in auction by lots. The prices realized were very poor compared with former years. The following is the financial result :—

No.	Ranges.	Number of Trees.	Cost.	Sale Results.		Remarks.
				Rs.	a.	
1	Bhiwndi	8,000	1,400 0 0	5,546	0	0
2	Shábápur	16,000	2,927 0 0	12,193	0	0
3	Kinowli	8,000	1,343 0 0	3,979	0	0
4	Mokháda	4,000	820 0 0	3,109	0	0
5	Kalyán	12,000	1,766 0 0	4,754	0	0
6	Murbád	12,000	1,782 0 0	3,972	0	0
7	Karjat	12,000	1,815 0 0	6,093	0	0
8	Khalápur	8,000	1,500 0 0	2,453	0	0
	Total	80,000	13,353 0 0	42,099	0	0

4,000 trees remained unsold.

115. The rates of cost of felling, bringing out to the forest depôt, and stacking varied from Rs. 14.11-0 to Rs. 20.8-0 per 100 trees, and the selling rates from Rs. 30 to Rs. 77 per 100 trees. The branches and stumps of the above trees produced 8,798 khandis of firewood locally known as *kita* and 4,002 khandis of *vishtár* (big-junks), and these sold for Rs. 8,970.

*East Khándesh Division.*

No.	Ranges.	TIMBER PIECES.			Cost.	Receipts.
		Teak.	Jungle-wood.	Firewood.		
1	Chopda ... ... ...	15,014	...	...	Khds.	Rs. a. p.
2	Jámner ... ... ...	10,000	...	...	302 0 0	2,927 12 0
3	Yával ... ... ...	5,050	...	...	75 12 0	1,111 0 0
4	Ráver ... ... ...	...	500	...	18 12 0	152 0 0
5	Bhusával ... ... ...	...	...	1,500	401 7 6	1,250 0 0
6	Chálisgaon ... ... ...	...	...	990	301 14 0	306 0 0
7	Edalabad ... ... ...	...	...	2,000	625 0 0	1,000 0 0
8	Jalgaon ... ... ...	...	...	1,000	322 11 6	1,155 0 0
9	Ráver ... ... ...	...	...	500	145 2 0	405 0 0
	Total ...	30,064	500	5,990	2,645 11 0	10,867 12 0

Prices were not good.

*West Khándesh Division.*

No.	Ranges.	Number of Trees.	YIELD.		Cost.	Receipts.	Remarks.
			Timber Pieces.	Fire-wood.			
1	Nandurbár ...	2,281	5,003	...	180 5 6	1,054 8 0	434 pieces unsold.
2	Navápur ...	8,160	15,205	...	719 0 0	4,443 13 7	
3	Nizámpur ...	421	2,160	...	49 15 0	186 8 0	
4	Pimpalner ...	101	1,000	10	30 0 0	493 10 0	
5	Sháháda...	48,348	4,065	807	765 1 0	1,730 0 0	230 khandis unsold.
6	Shirpur...	7,300	10,000	494	445 8 9	2,095 0 0	650 pieces and 494 khandis unsold.
7	Dhulia ...	4,132	...	2,000	500 0 0	2,610 0 0	300 khandis unsold,
8	Sindkheda ...	1,261	...	300	72 3 0	.....	
	Total ...	72,004	37,433	3,611	2,762 1 3	12,613 7 7	

116. The timber was composed of teak, tivas, and junglewood. There were 12,621 pieces in stock at the commencement of the year ; 10,991 of these were sold during the year. It will be seen that a large quantity of firewood remained unsold ; but the 2,554 khandis, which were on hand at the commencement of the year, sold for Rs. 709.2-0. The concession of very liberal privileges of cutting and taking free of charge comes in the way of sales. So long as people can obtain their supplies of timber and firewood free direct from the forests, or second hand at nominal cost, they will never resort to the forest and other departmental depôts to buy.

117. In the Násik Division the departmental operations were very extensive, as below stated :—

No.	Range.	YIELD.		Cost.	Receipts.	Remarks.
		Timber Pieces.	Firewood.			
1	Násik ...	139	800	Rs. 204 7 6	Rs. 386 0 0	.
2	Igatpuri ...	10,770	173½	361 10 10	2,535 0 0	
3	Sinnar ...	3,104	70	104 14 6	849 10 0	
4	Dindori ...	32,800	541	1,209 15 7	9,668 5 6	
5	Niphád ...	...	337½	93 1 6	281 12 6	
6	Chándvad ...	5,206	...	107 12 0	2,218 7 0	
7	Báglán ...	6,532	...	183 11 10	1,183 12 0	
8	Kalvan ...	20,690	1	549 13 9	3,217 14 0	
9	Peint ...	51,198	...	3,184 14 1	17,876 10 11	
10	Nándgaon ...	...	509	127 4 0	572 10 0	
11	Málegaon ...	654	506	136 2 6	412 13 9	
	Total ...	1,31,093	2,938	6,263 12 1	39,202 15 8	

118. The quantity of timber exploited was not so much as of last year, but more firewood was put into the market. In the Násik, Dindori, Niphád, Málegaon, and Nándgaon ranges, where there is a demand for firewood, special fellings of it were made.

119. Teak trees in the Akola and Sangamner forests of the Ahmednagar Division were felled in accordance with the provisions of working plan which had been made by Mr. Hight, Deputy Conservator of Forests. The timber is crooked and small, owing to the fact that in former years the trees used to be lopped or pruned, and all the other kinds of trees were cut away, protection being restricted to one tree, the teak, only. Jambul trees (*Jambosa salicifolia*) were felled in the "bets" or clumps on the banks of rivers; sales were not good. There were on hand, at the commencement of the year, 8,734 teak rafters and 554 jambul rafters. The cost of teak felling of the year was at the rate of Rs. 2-1-0 per 100 rafters, and the selling rate came to Rs. 16-7-0 per 100. Jambul fellings cost Rs. 2 per 100, and the receipts averaged Rs. 7 per 100. 1,188 teak rafters with 22 khandis 21 maunds and 7 lbs. of teak firewood and 4,575 jambul rafters with 15 khandis 10 maunds and 7 lbs. of jambul firewood remained unsold at the end of the year. Firewood fellings were made in the bábul reserves in the champaign country, the trees selected being dead, uprooted by floods, and blown down. A sudden flood swept 50 khandis of firewood out of the Johárapur Reserve in January. The cost of the firewood fellings have averaged 3 annas and 9 pies the khandi, and the receipts Rs. 1-12-0. The following table is an abstract of the operations :—

No.	Ranges.—	No. of Coupes.	Number of trees felled.	TIMBER PIECES.		Firewood.	Cost.	Receipts.
				Teak.	Jambul.			
1	Akola ...	15	13,910	29,922	10,858	293 22 14	Rs. 823 14 0	Rs. 4,617 4 10
2	Sangamner ...	4	8,112	15,764	1,980	539 10 18	380 9 9	3,314 2 3
3	Nagar ...	6	167	...	...	83 2 4	28 8 0	246 14 0
4	Shrigonda ...	3	360	...	...	100 18 7	21 0 6	358 0 0
5	Shevgaon ...	1	71	...	...	93 24 0	23 1 0	42 14 0
6	Nevása ...	1	85	...	...	29 23 0	5 0 0	25 15 0
7	Kopargaon ...	3	152	...	...	343 18 0	66 9 3	384 9 9
	Total ...	33	22,857	45,686	12,838	1,484 6 15	1,348 10 6	8,989 11 10

120. In the Poona Division the felling operations are distributed widely over the forests, and the material is sold in small lots to villagers, who are the principal

attendants of the auctions. In the Junnar Range, 5,000 teak pieces instead of 5,000 trees were felled. The extent of the operations and their financial condition will be seen from the following figures :—

No.	Range.	TREES FELLED.		YIELD.		Cost.	Receipts.
		Teak.	Jungle-wood.	Pieces.	Firewood.		
1	Junnar ...	1,694	439	4,980	235	146 12 9	2,448 2 6
2	Indápur ...	...	141	...	283	35 14 0	588 14 0
3	Khed ...	8,036	197	25,263	994	866 6 6	6,324 0 0
4	Ambegaon ...	5,000	800	20,209	193	358 5 3	6,817 12 0
5	Sirúr ...	...	1,619	...	1,018	184 9 6	2,441 8 0
6	Parandhar ...	3,000	11,000	8,170	578	272 14 3	2,091 12 0
7	Bhimthadi ...	...	1,052	...	1,119	187 12 3	3,263 0 0
8	Bárámati ...	...	340	...	530	56 9 9	1,294 1 0
9	Haveli ...	5,101	1,151	25,803	1,952	764 10 0	6,397 1 0
10	Mulshi ...	...	...	...	...	...	...
11	Mával ...	828	294	3,899	118	108 10 9	970 3 0
	Total ...	23,659	16,538	87,824	7,020	2,982 9 0	32,636 5 6

.. 121. In the Sátára Division, in the same way, fellings were made in all the ranges and the material was sold departmentally in lots by public competition :—

No.	Ranges.	YIELD.			Cost.	Receipts.
		Teak.	Jungle-wood.	Firewood.		
1	Pátan ...	22,714	5,988	550	1,115 15 0	7,184 9 0
2	Karád ...	12,020	...	700	499 15 3	3,728 2 0
3	Koregaon ...	1,860	...	110	137 0 0	546 0 0
4	Shíralá ...	9,240	...	115	174 9 9	1,763 11 3
5	Khatáv ...	17	106	22	13 6 0	56 0 0
6	Mahábaleshwar ...	...	3,402	1,189	869 15 3	1,725 15 5
7	Tásgaon ...	...	762	185	206 1 0	840 7 0
8	Khandálá ...	...	...	53	23 6 6	67 2 0
	Total ...	45,851	10,258	2,925	3,040 4 9	15,911 14 8

122. 12 khandis and 77 maunds of charcoal made at a cost of Rs. 36 sold for Rs. 96, and 19,000 bámbus cut and stacked at a cost of Rs. 126-11-0 sold for Rs. 196-9-6. Besides the above, at the forest dépôt at Málcolmpet, which is maintained for the supply of the station at Mahábaleshwar, the following sales took place :—

1,399 junglewood rafters for ...	...	...	Rs. 343	7	5
1,045 khandis firewood for ...	...	...	1,313	4	0
23 khandis and 12 maunds charcoal for ...	...	...	164	0	0
9,599 bámbus for ...	...	...	161	7	6

123. The departmental timber operations in the Sholápur Division are necessarily confined to the cutting of a few bábul trees for timber and the clearing out and sale as firewood of dead and fallen trees in the reserves.

124. The timber market in the Surat Division was very much depressed, and only a small quantity of the departmentally felled timber was sold, as will be seen from the stock account appearing in the table below :—

No.	Range.	TREES.		YIELD.		Cost.	Receipts.	Remarks.
		Teak.	Jungle-wood.	Timber Pieces.	Firewood.			
1	Mándvi ... ...	9,460	...	33,344	...	Rs. 1,855 0 0	Rs. 5,095 0 0	26,612 timber pieces not sold.
2	Chikhli and Párdi ...	5,080	7,220	12,349	Khandis 1,126 Tons. 162	1,112 0 0	5,919 0 0	6,507 pieces of timber not sold.
3	Dángs... ... ...	1,689	...	Cubic ft. 35,025	162 ... 12½ cubic feet.	1 6 per	.....	Not sold.
	Total ...	16,229	7,220	45,693	Khandis. 1,126 Tons. 162	... ...	11,014 0 0	• •
				Cubic ft. 35,025				

125. In the Panch Mahál Division there was a considerable stock of timber, firewood, and bámbus at hand at the commencement of the year, all of which was sold as under :—

Range.	Material.	Quantity.	Sale Results.
Godhra ... ...	{ Timber ... ... Firewood ... ... Bámbus ... ...	1,324 pieces. 4,771 khandis. 626	Rs. 625 12 0 2,543 0 0 4 3 0
Hálol ... ...	{ Timber ... ... Firewood ... ...	126 4,487½	6 0 0 240 4 0
	Total ...	.....	3,419 3 0

While the departmental transactions of the year consist of 8,028 timber pieces in the Godhra forests, which cost Rs. 478-10-11, and sold for Rs. 8,692-9-11, and 15,279 bámbus costing Rs. 210-2-0, which sold for Rs. 1,050.

#### I (e). Grass and other Minor Produce.

126. In the North Thána Division the bark of the ain trees (*Terminalia tomentosa*), which are felled departmentally producing timber and firewood, was stripped, packed, and sold at Rs. 5 per khandi of 784 lbs. to the fishermen of the coast for dyeing their fishing nets. The results are given below :—

Range.	Quantity.	Cost.	Receipts.
	K. m. lbs.	Rs. a. p.	Rs. a. p.
Basseín ... ... ...	101 7 0	50 10 0	506 4 0
Máhim ... ... ...	183 25 0	74 6 3	858 5 2
Dáhánu ... ... ...	85 14 0	147 0 0	290 0 0
	.....	.....	.....
Total ...	370 18 0	272 0 3	1,654 9 2

127. A departmental collection of the hirda nuts, the fruit of the *Terminalia chebula*, the myrobalan of commerce, was made as usual. The crop generally was an indifferent one, but in the Ahmednagar Division very much larger collections were made than during the previous year, when large thefts of hirda took place, and the thieves were caught and punished. The following table gives the collections and disposals of the year :—

Division.	Yield.		Cost.		Receipts.	
	1885-86.	1886-87.	1885-86.	1886-87.	1885-86.	1886-87.
	K. m. s.	K. m. s.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
South Thána ...	140 23 6	160 7 3	1,283 3 2	1,270 4 1	2,935 13 8	2,383 11 2
Násik ...	150 24 24	82 3 4	3,240 6 9	922 8 6	4,080 1 1	1,230 8 9
Ahmednagar ...	140 6 4	225 11 4	709 5 0	1,453 15 9	2,527 7 6	2,853 2 7
Poona ...	156 0 16	169 3 8	782 13 9	809 14 1	394 12 9	3,560 12 3
Sátara ...	907 11 20	691 17 4	6,698 10 11	4,924 13 4	19,566 4 2	6,718 15 0
Total ...	1,504 10 14	1,328 13 23	12,719 12 7	9,391 7 9	29,504 7 2	16,747 1 9

128. In the South Thána Division a small quantity of hirda—12 khandis 3 maunds and 10 sers—collected after the close of the year, the cost of which amounted to Rs. 74-5-0, was sold for Rs. 160-12 i. Thus the crop of the season came to 172 khandis 10 maunds and 13 sers. In the Násik Division the crop was not a good one, and the cost of collection was high. The price realized at auction-sales varied in South Thána, at 2 annas a pálí, Rs. 13-4-0, and in Ahmednagar Rs. 12-10-6 per Bombay khandi of 784 lbs. In the Sátara Division the price per Deshi khandi of 1,600 lbs. was only Rs. 30½, against Rs. 57 of the previous year, showing a very considerable decline.

## 2.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY PURCHASERS AND CONSUMERS.

### NORTH THÁNA DIVISION.

129.

(a)—Timber.

Range.	Number of Trees.	YIELD.			Receipts.
		Timber Pieces.	Battens.	Firewood Khandis.	
Umbargaon ...	15,000	14,155	3,512	1,430	17,563 4 9
Dáhánu ...	20,000	20,788	5,007	3,780	27,139 15 11
Máhím ...	15,000	19,520	3,089	2,215	21,102 3 0
Váda ...	20,000	19,864	7,409	1,950	22,467 11 0
Total ...	70,000	74,827	19,017	9,375	88,273 2 8

130. The local population is allowed to remove firewood on permits on reduced rates, and the following quantities were thus taken:—

Range.	Head-loads, 9 pies man, 6 pies woman, 3 pies child.	Large Cart, Re. 1.	Small Cart, Re. 0-8-0.	Kowl Khandis in Boats, Re. 0-6-0.	Total.	
					Rs. a. p.	Rs. a. p.
Sálsette ...	512 14 0	... 0 0	37 0 0	.....	549 14 0	549 14 0
Bassein ...	269 15 9	799 0 0	723 8 0	569 15 3	2,362 7 0	2,362 7 0
Máhím ...	...	...	1,577 8 0	908 15 5	2,486 7 5	2,486 7 5
Dáhánu ...	...	...	1,245 8 0	.....	1,245 8 0	1,245 8 0
Umbargaon ...	...	...	462 0 0	.....	462 0 0	462 0 0
Váda ...	...	42 0 0	100 8 0	.....	142 8 0	142 8 0
Total ...	732 13 9	841 0 0	4,146 0 0	1,478 14 8	7,248 12 5	7,248 12 5

131. Bámbus in like manner were removed by the local population for agricultural and domestic uses on specially reduced rates,